
Article:
Chesworth, E.A. (2019) Theorising young children's interests: making connections and in-the-moment happenings. Learning, Culture and Social Interaction, 23. 100263. ISSN 2210-6561

https://doi.org/10.1016/j.lcsi.2018.11.010

Theorising young children's interests: making connections and in-the-moment happenings

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Abstract

Global discourses for early childhood education are increasingly mediated by an instrumental discourse associated with standardised notions of knowledge acquisition. However, an alternative discourse for early childhood emphasises the importance of learning experiences that are responsive to the diverse interests that children enact in their play. In this article I argue that instrumentalism reproduces binary conceptualisations of knowledge through which curriculum content privileges universal forms of knowledge over the locally situated knowledge which is mediated by children's interactions and intra-actions within fluid and overlapping social, cultural and material contexts. Drawing upon an episode of play from an early years classroom in England, this paper explores three different ways in which the notion of 'interest' can be conceptualised and positioned in relation to young children's learning, knowledge and ways of knowing. In so doing, the paper poses critical questions regarding 'what counts' as valid knowledge and as legitimate modes of becoming knowledgeable. I suggest that interests are constituted by a combination of children's intentional motivations to make connections with sociocultural repertoires and the unpredictable, in-the-moment happenings that emerge through intra-activity in early childhood learning environments.

Key words: early childhood education; interests; new materialism; post-humanism; knowledge.

1 Introduction

Global perspectives of early childhood education are increasingly characterised by an instrumental discourse of accountability associated with standardised notions of learning and curriculum which privilege normative and universally prescribed knowledge. However, an alternative discourse emphasises the importance of constructing learning experiences in response to the diverse interests and inquiries that children enact and explore in their play. The juxtaposition of these seemingly conflicting discourses poses dilemmas for teachers who are held accountable to instrumental interpretation of progress whilst also ascribing to play-based approaches to learning (Hedges and Cooper, 2018). In this article I have re-turned (Barad, 2014) to an episode of play from previously analysed data (Chesworth, 2014) in which

I explored play in an English classroom from the perspectives of children, their parents, siblings, and teachers. Through revisiting this episode, I explore three ways in which the notion of 'interest' can be conceptualised and positioned in relation to young children's learning, knowledge and ways of knowing. In so doing, I explore critical issues regarding 'what counts' as valid knowledge and as legitimate modes of becoming knowledgeable in early childhood education. Such issues have international significance because they highlight key challenges and opportunities regarding the realisation of interests-based curricula in early childhood education.

2 The Policy Context: Whose interests? Whose knowledge?

Neoliberal policy directives in England position early childhood education as a site for school readiness (Ang, 2014; Neaum, 2016) in which discourses of intervention and preparation have led to an emphasis upon 'normativity and performativity' (Moss, 2013, p. 5). The English curriculum for children from birth to five, the Early Years Foundation Stage (EYFS) (DfE, 2017a) exemplifies the global preoccupation with school readiness and linear notions of progress, thus reinforcing a standardised conceptualisation of knowledge in which predetermined learning outcomes are assumed to have universal relevance for all children (Moss, 2013). The outcomes-driven regulatory agenda which permeates the English education system has intensified standardised constructions of what is deemed to be valid and valuable knowledge for young children (Wood and Hedges, 2016). In the EYFS, instrumental approaches to assessment hold teachers accountable for children's progress towards the Early Learning Goals (DfE, 2017a). Summative assessment at the end of the EYFS requires schools to report data regarding the Good Level of Development (GLD) (DfE, 2017b), a concept which embodies normative priorities in both its name and its purpose of monitoring which children do, and do not, demonstrate the prescribed criteria for achieving the Early Learning Goals at the age of five. As Bradbury (2013, p. 7) suggests, the GLD can thus be understood to be 'a description of an unrealisable ideal learner identity, which the child must strive towards as it continues on a pre-specified trajectory'. The GLD and associated assessment practices therefore act as powerful mechanisms to fuel the neoliberal machine and its preoccupation with standardised forms of knowledge. Constructions of what is deemed to be valuable knowledge and valid ways of knowing are consequently understood in an ideological climate in which 'diminishing

any differences in children's outcomes' (Ofsted, 2018, p. 65) has become enshrined as the priority for early childhood education. What is problematic here is not the aspiration to raise attainment, but rather the outcomes through which attainment is measured, and how these outcomes are assessed. Thus, a reductionist approach to knowledge acquisition suppresses complexity and views difference and diversity as problematic, thereby turning 'the Other into the same' (Moss, 2014, p. 42).

At the same time, the EYFS requires teachers to 'plan a challenging and enjoyable experience for each child' (DfE, 2017a, p. 9) based on the 'individual needs, interests and stages of development' (DfE, 2017a, p. 9). Interests in this context are consequently defined through an individualised lens and valued for their capacity to propel children up the normative ladder which leads to the ELGs (Chesworth, 2016). In accordance, the EYFS advocates a narrow conceptualisation of play in which it serves as a context to deliver and evidence the curricula content of the seven Areas of Learning and Development (DfE, 2017a) that lead to the ELGs. As such, the requirement for 'planned, purposeful play' (DfE, 2017a, p. 9) requires that children play within the confines of a predetermined curriculum in which play is framed as a form of pedagogical control (Wood, 2014). A discourse of planned and purposeful play consequently reflects a global shift towards a technicist interpretation of play (Wood, 2014) which requires adults to direct children's ideas towards prescribed learning outcomes (Hedges, Stagg Peterson and Wajskop, 2018). Broadhead (2006) argues that the association of play with universally prescribed curriculum learning goals has led to the adult colonisation of play and the consequent restriction of children's agency to pursue their own interests and preoccupations. Lambirth and Goouch (2006) refer to this as the invisible pedagogy of the early years classroom and suggest that implicit control is achieved through the seeming availability of free choice activity that is in reality manipulated by adult-imposed restrictions in terms of what, where and how play is allowed to take place. Despite a rhetoric of an interests-based curriculum, the extent to which those interests that reside beyond the ELGs are recognised and valued is questionable.

In the discussion that follows I focus upon one episode of play to explore what happens when children's play interests are viewed through different lenses. In so doing, I ask critical questions regarding how interests are positioned in relation to knowledge and curriculum.

Such questions acquire international significance when considered against the backdrop of a global drive towards standardisation that I argue acts as a regulatory agent regarding which interests are validated as acceptable sources of knowledge. First, I provide a brief overview of the research from which the episode of play is taken.

3 The research context

The episode of play that is the focus for this article took place in a study which explored the meanings and motivations that children, their parents, siblings, and teachers ascribed to play in a reception class. The reception class is located at the transition from non-statutory, preschool provision to compulsory schooling in the English education system. The transitory characteristics of the reception class has long been the subject of debate regarding pedagogical approaches for four- and five- year olds. Consequently, the policy discourse of school readiness is experienced most acutely in the reception year (Roberts-Holmes, 2015) in which teachers are required to consider their pedagogical approach in relation to preparing children for more formal learning. Policy imperatives consequently mean that play in reception classes is often subject to control and regulation (Rogers and Evans, 2008), with teachers' accountability for externally prescribed outcomes acting as the dominant influence for curriculum and pedagogical decisions (Wood and Hedges, 2016).

The research took place in a school located in a small town in northern England, within which the reception class formed part of a large EYFS Unit which also offered part-time nursery provision for three-year old children. The physical space comprised three inter-linked classrooms with permanent areas of play provision as well as tables for adult-led activities. The children had direct access to a large outdoor space for most of the day. Over an eight-month period, I used filmed footage of five children's everyday classroom play as a provocation for unstructured conversations during regular visits to the classroom and to the children's homes. This approach drew upon the video-cued, multi-vocal ethnographic studies of Tobin, Wu and Davidson (1989) and Tobin, Hsueh and Karasawa (2009), an approach that I extended to acknowledge other-than-vocal, embodied and emplaced (Pink, 2009) characteristics of meaning-making.

Ethical approval was gained through the university and parents were asked to provide informed consent for their children to take part in the study. The children's assent to participate was understood to be an ongoing, flexible and provisional process (Flewitt, 2005). Children sometimes opted to withdraw from the research on a temporary or, in one case, a permanent basis. Filming children's play raises ethical questions (Flewitt, 2005) and I was mindful that it could be construed as intrusive (Einarsdottir, 2011). Filming became an ethical practice and use of the camera necessitated a reflexive consideration of how children and their play were presented in the recordings. In the discussion that follows I have used pseudonyms to respect the children's and teachers' requests for anonymity.

4 The episode

In the original study from which this episode is taken, I undertook a thematic analysis of the perspectives of the children, their families and their two teachers to identify some ways in which the children's play was mediated by their participation in the interconnected contexts of the classroom, the home and the wider community. However, my intention for this paper is not to report the research findings per se, but to re-turn (Barad, 2014) to one event from previously analysed data in order to enable 'different understandings, different feelings and different subjectivities to emerge' (Lennon, 2017, p. 55). The re-imagining of single events has been used by early childhood scholars to generate new readings of quality (Duhn and Grieshaber, 2016) and to unsettle subject-object relations in early childhood data analysis (Hultman and Lenz Taguchi, 2010). In this paper I apply a similar approach in order to problematise and open up different ways of conceptualising interest in early childhood education.

The episode took place in the sixth month of data collection and focusses upon Lucy, aged four, and Harry, aged five, playing with water in the outside area of the unit, where the teachers had placed a large plastic tray, lengths of guttering, a water butt, buckets and a selection of equipment for children to place inside the gutters. The discussion that follows draws upon the children's and their two teachers' responses to viewing the filmed footage of this episode of play, combined with my interpretations and extracts from the wider dataset of teachers' readings of play. I present three readings of what is happening, placing emphasis

upon the notion of interest in each version of the analysis. I apply different lenses to indicate how shifting perspectives change what is noticed, what is brought to the foreground and what is ignored or invisible in the children's explorations with water. First, I consider children's interests in relation to policy directives and focus upon the English context to indicate how predetermined and universally applied forms of knowledge are constructed by international priorities and agendas for early childhood education. Next, I draw upon elements of Corsaro's (2000) peer cultures theory through which to consider the relationship between interests, knowing and knowledge. In the third reading I explore the possibilities afforded by new materialist theoretical perspectives to think in novel ways about interests in early childhood.

Figure 1 presents three still images from the filmed footage of an episode of play involving three children - Lucy, Harry and Jordan - with a transcript of the children's comments that are audible in the recording (left column) alongside the conversation I had with Lucy and Harry (right column) as we watched the film in the classroom later the same day.

Figure 1: Water and Gutters

Lucy: (*Laughing*) Oh look, the water went all the way down, right down there. Yeah, I liked that it went all the way down.

Harry: Yeah, I didn't know that was going to happen.

(Lucy and Harry look at each other and laugh).

Lucy: Yeah the floor (*pauses*) the ground got soaked. The water's gonna come out of them. Them gutters.

Lucy: (*Pauses film)*. Yeah, this is where we play the game where we tip water out. It goes all the way down. Down to there (*points outside the window towards the bottom of the playground).*

Lucy: Look, Harry!  Harry: It's going down here! Jordan: You've made it all wet. Are you allowed?	Liz: Have you played that game before, Lucy? Lucy: No, that's our first time. But we'll play it again now, we're gonna do it for, well, 7 weeks. Harry: Yeah but next we'll tip the whole water out, won't we? Lucy: Yeah, we're gonna get a lot of water so it goes down there and makes a puddle again – no, bigger than a puddle actually (*extends both arms).* Harry: Yeah, shall we go and play it now, Lucy?

4.1 First reading: an instrumental policy perspective

The planned learning outcome for this activity was for children to observe the effect of gradient on the flow of water. Correspondingly, the children were instructed that they should change the positioning of the gutters and observe what happened to the movement of the equipment when water was poured into the guttering. Emphasis was placed upon the importance of keeping the water within the limits of the guttering and the water tray, thereby establishing a regulated space for play, bounded by normative forms of knowledge and offering limited scope for the legitimate generation of alternative inquiries. This is indicative of what Lenz Taguchi (2010, p. 16) poses as a perennial problem in contemporary education, namely that '*we start with the end* – what is to be achieved and assessed'. Interests generated through playful encounters between children, materials and space were consequently constrained by the discourse of planned and purposeful play upheld in the EYFS curriculum.

However, Lucy's repositioning of the gutter caused the water to flow beyond the confines of the tray and to form a puddle. The children's commentary as they watched the video footage

suggests that this provided an unexpected but interesting turn to the focus of play. Lucy noticed the water flowing down the sloping surface of the playground and commented 'Oh look, the water went all the way down, right down there. Yeah, I liked that it went all the way down'. The puddle subsequently became the focus of the children's interest and the lengths of guttering were abandoned. Interpretation of this encounter through a policy lens might therefore indicate that neither Lucy nor Harry had achieved the intended learning outcome, because they had not followed the teachers' instructions. The planned response, therefore, might be to revisit the experience with an adult playing alongside the children in order to provide the necessary structure to enable the acquisition of intended knowledge. In this reading, the children's interests are not recognised; pursuit of knowledge that does not comply with predetermined curriculum requirements is consequently positioned as irrelevant or rendered invisible. As Tracey, one of the teachers, commented when she watched the footage: 'Everything is targets, targets, targets and sometimes other things they're doing can be missed because you're so focussed on picking up specific things.'

Accordingly, the teachers' accountability for children's progress towards universal learning goals was made visible through the comments they made when watching the filmed footage of children's play. At the beginning of the eight-month study, their comments were often framed by the familiar lens of individual attainment and progress towards statutory learning goals. For example, Tracey's comment that 'There's some really good evidence here for Imagination, and for Designing and Making. It ticks all the boxes,' was indicative of her focus upon the prescribed curricula elements of the EYFS. Meanwhile, Margaret referred to the statutory assessment that takes place at the end of the reception year to interpret play in relation to predetermined outcomes, saying 'This will be filling all that section of the profile'. From an instrumental policy perspective, play must align with predetermined curricula requirements and this creates challenges for teachers' capacity to recognise and respond to children's interests. Thus it can be seen that there are tensions between a policy discourse which advocates an interests-based curriculum whilst also reproducing instrumental interpretations of play. Emphasis upon play that is *planned and purposeful* privileges universal forms of knowledge over that which emerges in diverse and fluid social, cultural and material contexts. At the end of the eight-month study, Tracey and Margaret identified some challenges associated with the discourse of planned and purposeful play. Reflecting upon the

filmed footage that we had watched together, they acknowledged that play frequently developed in directions other than the purposes for which they had planned. As Tracey said: 'They don't necessarily use things in the way you think they will. I put musical instruments out on Monday but they never get used as instruments, they get used as sticks, guns or the like. If they've got an idea the resources spark their imagination, it doesn't matter what it is'. Thus, is seems that the children enacted glimmers of agency despite the regulatory influence of a policy discourse. However, as I will argue in the next section, the capacity for such interests to become more complex is limited when play cultures are positioned as separate to pedagogical decision-making.

4.2 Second reading: locating interests within the peer culture of the classroom.

In Reading Two, I locate children's play within the peer cultures of the classroom community and draw upon the analysis that I undertook in my PhD, through which I contested an individualised conceptualisation of interest. Instead, I drew upon Rogoff (2003) to argue that children's knowledge is co-constructed through their participation in socially and culturally defined practices. Children's engagement in everyday practices within their homes, schools and communities consequently became key to understanding their interests (Hedges, 2015). I argued that children's interests were located within the peer culture of the classroom to which children brought diverse funds of knowledge (Moll et al. 1992; González et al., 2005) which were reconstructed in play. From this perspective, interests are not contained within the realm of individual minds; rather, they are distributed across the peer culture of the classroom and mediated by participation in mutual enactments of play (Chesworth, 2016).

In Reading One I argued that a policy perspective highlights that the children's playful inquiries with the water did not align with the planned learning intention for this activity. As Margaret, one of the teachers, commented, 'They took that carefully laid out structure that an adult had set out this morning at the beginning of the day, and that layout clearly meant absolutely nothing to that group. They rearranged the whole set-up.' A peer culture interpretation could suggest that Lucy, Harry and their peers' (mis)use of resources constituted an act of resistance through which they enacted collective agency in order to explore a mutual interest which did not resonate with the prescribed knowledge or outcomes that had been planned for this activity. Corsaro (2000) draws upon Goffman (1961) to argue

that such acts of resistance act as secondary adjustments within peer cultures through which children adapt to the constraints the classroom through violation and subversion of rules (Goffman, 1961). Markström and Hallden (2009) have also used Goffman's notion of secondary adjustments to theorise the ways in which children take an active role in influencing how preschool spaces are used. Markström and Hallden (2009) argue that 'children adopt strategies and make pragmatic use of resources to resist the institutional discourse and gain control, and in doing so, influence and shape their everyday lives' (p. 121). Secondary adjustments, according to Corsaro (2000), constitute children's individual and collective attempts to resist adult rules and hence to gain control of aspects of their everyday lives and to strengthen the collective identity of the peer culture. While Corsaro recognises the dynamic interaction between adult and peer cultures (Löfdahl and Hägglund, 2006), he focuses upon how children's secondary adjustments such as rule evasion constitute the collective practices that construct peer cultures. A peer culture reading would thus argue that children's interests are located in the underlife (Corsaro, 2000) of the classroom.

As such, Corsaro's (2000) application of secondary adjustments is based upon an assumption that there is 'an asymmetric power balance, where children, individually as well as in terms of belonging to a social category, are dominated by the adults and their culture' (Löfdahl and Hägglund, 2006, p. 182). This brings to mind two cultures existing in parallel, whereby the teachers' sanctioned uses of space, time and materials are resisted through children's secondary adjustments through which they are able to resist normative forms of knowledge in order to explore their collective interests and inquiries. However, as Yeung and Somashekhar (2016) argue, Goffman's secondary adjustment focuses upon the agentive capacity of self to resist control within the 'underlife' (1961, p. 201) of an institution that is usually 'shielded from the eyes and ears of staff' (1961, p. 229). Goffman (1961) consequently proposes that figures of authority - in this case, teachers - may sometimes opt to ignore acts of violation or subversion. Nevertheless, Goffman understands secondary adjustments to constitute internalised performances of agency that do not influence the structural practices of the organisation. Therefore, the notion of secondary adjustments emphasises a somewhat passive response to power (Yeung and Somashekhar, 2016), reflecting a simplified interpretation of resistance which is 'merely the obverse of a one-dimensional notion of power as domination' (Rose, 1999, p. 279).

Consequently, whilst a peer culture reading enables recognition of the ways in which Lucy and her friends created new meanings arising from a mutual interest in the formation of a puddle, it does not offer pedagogical insights as to how this interest could become more complex. Rather, approved forms of knowledge and ways of knowing are separated from the children's interests, which remain located within the underlife of the classroom. In this case, Lucy's theorising that 'we're gonna get a lot of water so it goes down there and makes a puddle again – no, bigger than a puddle actually' could not be brought to fruition because the curriculum plan dictated that the water resources were removed the following week to make place for a new planned play activity. The interest was therefore truncated and the potential for it to become more complex was prevented.

A peer culture reading of this episode of play thus shifts the focus from interest from the individual towards a more distributed notion in which interests are recognised as distributed and mediated by participation in collective play activity. However, an interpretation that positions interests within the underlife of children's peer cultures does not illuminate how multiple elements of the classroom have the potential to interweave in order to enable such interests to become more complex, nor indeed to develop in new and unpredictable directions.

4.3 Third reading: interests as intra-action

In the third analysis I draw upon some key concepts from new materialist theory to propose a complex reading of play in which individual, social, material, spatial and discursive elements act together to create, and to potentially transform, children's interests. New materialism suggests that nonhuman matter is not passive; rather, it has a vibrancy (Bennett, 2010) which unsettles the anthropocentric view that human culture is separate from, and in authority over, nonhuman domains. To suggest that this is a wholly 'new' way of viewing the world is misleading because many Indigenous people have long understood the world as an entanglement of human and nonhuman elements (Taylor, 2013). Nevertheless, new materialism and the broader ontology of posthumanism within which it resides, unsettle the longheld Western assumption that humans are at the centre of the universe. A new

materialist perspective therefore enables this episode of play to be viewed through a broader lens, which decentres the focus of attention from the children's actions and instead illuminates the complexity of connections between the human and nonhuman world (Malone, 2016).

The nonhuman elements of the play encounter are consequently no longer positioned as 'passive backdrop or stage of the active human subject' (Lenz Taguchi, 2011, p. 37), nor even as affordances (Gibson, 1977) in which the children's use of resources are 'fuelled by the jointly constructed cultural context' (Vuorisalo, Rutanen and Raittila., 2015, p. 76). Instead, the focus of attention become the dynamic interconnectedness of human and non-human elements, and the effects that these connections produce. Lucy repositioned the gutter and the water escaped from the confines of the tray; it ran in rivulets, embracing and enveloping the surface of the playground. A new materialist reading would suggest that the water was not a passive affordance for play; rather it had vitality and played an active role in the unravelling of events. According to Barad (2007, p. 376), 'the world is an ongoing intra-active engagement, and bodies are among the differential performances of the world's dynamic intra-activity, in an endless reconfiguring of boundaries and properties'. As such, the intra-actions between Lucy's body and the water and the gutter caused the direction of play to move away from the planned learning intentions. Likewise, the subsequent formation of the puddle arose from the interplay between Lucy's actions with the flow of the water and the topography of the playground. Lucy was affected by the water and the water was affected by Lucy: as Harker (2005, p. 59) suggests, 'there are a great many more bodies playing' than those of the children.

This reading suggests that a dynamic configuration of humans, materials, spaces, practices and discourses were *acting together* to create the children's interest in the puddle formation. This is indicative of a holistic conceptualisation of interest associated with the perspective that 'we are not outside observers of the world. Neither are we simply located at particular places in the world; rather, we are part of the world in its ongoing intra-activity' (Barad, 2007, p. 184). Viewed as such, knowledge and being are thus inseparable. Barad (2007, p. 185) defines this as an onto-epistemology, 'the study of practices of knowing in being'. This

perspective illuminates the entanglement of human and non-human elements in which Lucy' was learning *with* water, rather than generating knowledge *about* water.

Such a reading argues that interests are created through children's intra-actions with the social, material and discursive elements of the worlds in which they live. Such interests are associated with an onto-epistemology through which 'meaning is made moment by moment and exposes the deep complexity and layers through which such assemblages may be read' (Duhn and Grieshaber, 2016, p. 62). Within these layers I suggest that Lucy and Harry brought funds of knowledge amassed from their previous experiences of water associated with everyday domestic and classroom experiences. Here, too, were the echoes of a regulatory discourse for play, resonating in Jordan's question, 'You've made it all wet - are you allowed?' Entangled within these sociocultural and discursive elements was the materiality of water and the topography of the sloping playground. All of these elements intra-acted to transform the discourse of planned and purposeful play into a wholly different experience through which to generate the children's interest in the creation of a puddle.

The peer culture reading outlined in Reading Two would argue that Lucy was performing agency to navigate, resist, and subvert the learning outcomes for her play in order to explore an alternative interest. By contrast, an intra-active reading would suggest that agency is enacted in multiple modes by all material bodies (Latour, 1999), leading to a distributed notion of agency (Lenz Taguchi, 2011) which recognises that materials 'produce effects and alter situations' (Bennett, 2004, p. 355). As such, Bennett (2010, p. 17) suggests that 'what is manifest arrives through humans but not entirely because of them.' As Murris (2016, p. 156) indicates, 'intra-action is mutual relationality: things 'are' because they are in relation to and influencing each other.' This would suggest that the puddle was created not as an outcome of intentional resistance against a regulatory discourse for play, but by a discovery generated by a series of unpredictable intra-actions that caused the water to escape from the confines of the plastic gutter. Locating children's interests within the complexity of classroom intra-actions therefore affords novel opportunities for pedagogy that is responsive to the multiple ways in which such interests have the transformative potential to generate new knowledge and new ways of knowing.

5 Shifting the discourse of 'interest': from *knowing about* towards *knowing with*

In this paper I have shown how the notion of interest shifts when different lenses are applied, prompting contrasting understandings of how interest relates to, and with, knowledge and becoming knowledgeable in an early childhood setting. I have argued that a policy reading positions children's interests beyond predetermined notions of learning and knowledge. Meanwhile, a peer culture reading places children's interests in opposition to legitimate forms of knowledge. Neither of these readings, then, offer a satisfactory lens through which to explore the potential of building a curriculum that is responsive to the dynamic unfolding of young children's interests and inquiries.

By contrast, evidence from contemporary research indicates the ways in which sociocultural perspectives can enable children's interests to be understood within the context of relationships and culture (Hedges, Cullen and Jordan, 2011; Hedges, 2015) that extends beyond the peer culture of the classroom. Such studies offer important insights regarding pedagogical approaches that are based upon children's and teachers' shared participation in responding to and extending interests (Hedges and Cullen, 2012; Hedges and Cooper, 2018). Wood and Hedges (2016) propose that the notion of working theories has the potential to reconcile children's interests and inquiries with the acquisition of knowledge in early childhood education. Hedges and Jones (2012, p. 36) describe working theories as:

> 'the tentative, evolving ideas and understandings formulated by children (and adults) as they participate in the life of their families, communities and cultures and engage with others to think, ponder, wonder and make sense of the world in order to participate more effectively within it.'

Working theories, then, recognise the unpredictable, emergent and locally situated characteristics of young children's knowledge acquisition. Building on this, I suggest that a new materialist perspective offers a novel contribution to understanding the process by which interests generate new knowledge by shifting the gaze beyond children's participation in the social plane. Accordingly, Taylor, Blaise, and Giuni (2013, p. 49) argue that a posthuman lens 'repositions childhood within a world that is much bigger than us (humans) and about more than our (human) concerns. It allows us to reconsider the ways in which children are

both constituted by, and learn within, this more-than-human world.' This expands upon the notion that children's interests are mediated by participation in sociocultural activity in order to embrace the (intra-)active role that is played by the non-human elements of children's worlds. In accordance, recognition that humans are 'in a state of mutual inter-dependence with everything else' (Lenz Taguchi, 2011, p. 40) requires that children's interests are conceptualised in terms of the interconnectedness of all matter.

A new materialist perspective suggests that children's interests are generated and have potential to become more complex within the vibrant ecologies of early childhood settings in which humans and nonhumans are always intra-acting, always in relation with one another (Pacini-Ketchabaw, Kind and Kocher, 2017). Interests can therefore be understood as the means by which children learn with, rather than learn about, the components of the worlds in which they live. The complex and multiple relations that constitute interest consequently extend the gaze beyond social and cultural factors in order to explore a wider range of 'causal factors for understanding what is going on in an educational encounter' (Murris, 2016, p. 91). Learning can be understood to be a 'convergence of energies' (Pederson 2011, p. 7) through which, as Quinn (2013, p. 742) suggests, 'the project of learning becomes not what distinguishes me from all that is around me and makes me superior to it, but what makes me part of it'.

6 New possibilities for investigating children's interests: pedagogical and theoretical implications

The relational ontology of new materialism points to an in-the-moment connection between interests and pedagogy in early childhood environments. This perspective embraces a holistic understanding of interests that moves away from the dualist associations of the controlling adult and the resisting child. Instead, interests are relocated within a complex web of relations which can potentially involve children, adults, space, time, animals, materials and objects. Becoming attuned to the diverse ways in which children co-create their interests through a series of moment by moment intra-actions requires a dynamic approach to pedagogy which highlights new possibilities for the role of the teacher. This signals a move away from the contrasting roles of neutral observer or controlling scaffolder and opens up opportunities for

adults to participate in what Rautio and Winston (2015, p. 23) refer to as 'intra-active improvisation which requires fluctuating and dynamic rather than fixed and predetermined engagement from all involved'. A dynamic pedagogy necessitates openness to uncertainty and recognition that interests develop in unpredictable directions, thus enabling 'the opening up of closures' and 'the unpicking of fixed destinations' (Lenz-Taguchi, 2010, p. 23). This does not imply a return to laissez-faire approaches to pedagogy, nor does it point towards the absolute removal of structure. Instead, it highlights the potential of an intra-active pedagogy (Lenz Taguchi, 2010; Murris, 2016) through which adults bring their experience and knowledge to an unfolding co-exploration of interests that is driven by mutual curiosity.

Such in-the-moment co-explorations of interests afford opportunities for adults and children to intra-act with non-human elements in ways that generate more complex ideas, knowledge and understanding. The decisions that teachers make about how space and materials are utilised - and the degree of fluidity or control associated with such decisions – therefore have a profound effect on the affordances and constraints for interests to unfold and become more complex. Of course, recognition of the importance of the physical learning environment is not new and child-centred pedagogies arising from the legacy of Piaget (1954) have long emphasised the importance of children's active engagement in learning environments. However, the activity centres, or areas of provision, that typify the spatial organisation of early childhood settings could be understood as forms of pedagogical control that regulate where, and with what, children play. A less rigid demarcation of space as the locus for specific activities could enable more flexible relations between children, adults and materials. A new materialist lens, therefore, enables us to 'increase our attentiveness to things, artefacts and spaces in pre-schools and schools that are often overlooked in favour of the social or interpersonal relations' (Hultman and Lenz Taguchi, 2010, p. 540).

Nevertheless, I acknowledge Quinn's (2013) words of caution against the wholesale adoption of new materialism and the corresponding rejection of sociocultural perspectives in educational studies. For example, the de-centring of the human does not address the ways in which the realisation of an interests-based approach is 'shaped by the persistent opportunity gaps that continue to structure how learning is organized' (DiGiacomo et al, in press, p. 9). Braidotti (2010, p. 203-204), however, argues that a 'shift away from anthropocentrism, in

favor of a new emphasis on the mutual interdependence of material, biocultural, and symbolic forces in the making of social and political practices' could 'pave the way for an ethical regrounding of social participation and community building'. In support, Kuby and Rowsell (2017) argue that posthuman pedagogies afford potential to think in new ways about matters of ethics and justice in early childhood. For example, contemporary studies have applied a posthuman lens to inform critical investigations of the ways in which material, social and political elements interweave to produce racialised (Thiel and Jones, 2017) and gendered (Lyttleton-Smith, 2017) subjectivities in early childhood education.

As such, whilst a new materialism lens enables new insights into interest, such a reading does not reject the importance of children's participation in sociocultural practices; rather, it contributes new possibilities through which to blur the boundaries between the social, cultural and non-human factors which interweave within and beyond children's experiences in early years settings. Therefore, I argue that interests are constituted by a combination of children's intentional motivations to make connections with sociocultural repertoires and the unpredictable, in-the-moment happenings that emerge through intra-activity. As Quinn (2013, p. 752) suggests, 'Perhaps post-human theory presents an ideal, which a socio-cultural perspective can then start to trouble. By operating with this dual perspective, we can identify both what is possible and what is yet to be done'. Future research agendas that adopt this dual perspective have the potential to investigate critical questions regarding how different classroom assemblages of material, social, spatial and discursive agents act together to privilege some interests over others, and to perpetuate or disrupt educational inequalities associated with gender, race, class and ethnicity.

7 Conclusion

The current instrumental policy context within which early childhood education is located continues to pose challenges for the unpredictable and dynamic exploration of children's interests. In England, linear and uniform learning structures which are mapped out by the EYFS curriculum serve to reify striated forms of knowledge that emphasise instrumental notions of school readiness and conformity over uncertainty and difference. To return to the words of Tracey, one of the teachers who participated in the research discussed in this paper,

‘Everything is targets, targets, targets and sometimes other things they’re doing can be missed because you’re so focussed on picking up specific things.’ It takes a bold, skilful and responsive teacher to adopt an in-the-moment pedagogical approach (see, for example, Ephgrave, 2018) whilst simultaneously navigating the current climate of standardisation.

What, then, could become possible if teachers were able to shift their attention from a predetermined framework of outcomes towards a more complex exploration of those interests that are currently missed? What possibilities could have been realised if Lucy’s working theories with water had not been truncated, but had instead been noticed and opened up to enable further pondering, puzzling and inquiry? In this paper I have proposed new configurations of interest which draw upon sociocultural and new materialist perspectives to emphasise the dynamic and emergent characteristics of young children’s inquiries and preoccupations. I have argued that a decentring of the human elements of early childhood education can extend the concept of working theories in ways that shift the focus from children becoming more knowledgeable about the world, towards children becoming more knowledgeable with(in) the world. There is potential for children’s interests to move beyond their residence in the underlife of early years peer cultures and to correspondingly become more than enactments of resistance to instrumental policy discourses. Instead, those interests that emerge through the dynamic intermingling of humans, materials, spaces, practices and discourses offer multiple possibilities for the generation of a divergent and dynamic curriculum. Nevertheless, the capacity for teachers to engage with the complex and uncertain interests that unfold in early years settings continues to be an important topic for critical discussion and further investigation.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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